

THURSDAY, AUGUST 23, 1900.

*A MUSEUM CATALOGUE.*

*Descriptive and Illustrated Catalogue of the Physiological Series of Comparative Anatomy contained in the Museum of the Royal College of Surgeons of England.* Vol. i. Second edition. Pp. xlix + 160. (London: Taylor and Francis, 1900.)

OF the catalogues of the Royal College of Surgeons, rendered famous by the labours of Hunter, Owen and Flower, but one in osteology, by Dr. R. Bowdler Sharpe, and one in teratology, by Mr. B. Thompson Lowne, have appeared during the present conservator's term of office. Prof. Charles Stewart, unlike his predecessor in this office, who concentrated his attention upon one special department, has since his appointment greatly developed all sides of the collection, and with the aid of his competent assistants has added year by year specimens of surpassing value and interest, which have become the admiration of all beholders. The period of his conservatorship has been one of unparalleled activity in all branches of zoology, and in the labour of keeping pace with this he has not been found wanting, as, for example, when, on the discovery of the calcified teeth of the Monotreme, he produced from his rich store of material the famous specimen which has since adorned his shelves, and shows more than all others yet described. With this museum, as with others in our own land, the Englishmen's colonising instinct has come forcibly into play, in the accumulation of objects, not merely of local interest, such as are generally to be found in the museums of other countries, but general and universal, wherefore the present catalogue is of necessity based upon a matchless material.

It is explained in the preface that the specimens registered have been dealt with on the original Hunterian lines, the intention being to bring together examples of such structures in plants and animals as perform the same function; and comment is further made upon the necessity for a large number of preparations "to supply the places of those that have become worthless, and to serve as illustrations of new discoveries, and phases of thought." At the outset, necessity, begotten of progress and advancement, is met by the propounding of a scheme, clearly explained in the text, under which it is proposed to distinguish, firstly, between "Structures concerned in the preservation of the individual or to its advantage" and those "concerned in the preservation of the race." Under the former of these departments, sixteen headings are included, under the latter eight; and since the present catalogue deals with but the first three of the former series, those alone need be further remarked upon. They read "Endoskeleton"; "Flexible Bonds of Union and Support"; "Muscular and Allied Systems"; but before passing on to consider them more fully, it may be said that they and the twenty-one headings of sections to follow are, in the preliminary portion of this, the first volume of a series, individually set out in greater detail, each with a concise statement of the order of arrange-

ment to be adopted, and a definition, when necessary, of what is implied in the heading it bears.

The arrangement of each section is so framed as to include both plants and animals, whenever possible, the former being considered first, and each in ascending order. Turning now to the three sections to be specifically considered, we find specimens illustrating, under the first, the chemical composition, structure, and mode of formation of the various endoskeletal systems; under the second, the various forms of ligaments and joints; and under the third, the forms, structure and texture of muscles. To particularise in these columns concerning the details of either of these is impossible; but it may be said that no leading type of tissue or arrangement of parts is unrepresented, and that preparations like that of the cartilages of the cuttle, the elastic honeycomb of the flexor carpi muscle of the elephant, or of the leaves of the sensitive plant fixed in the diurnal position, must be seen to be appreciated.

The most attractive portions of the work are those dealing with the marvellous array of processes occurring in the growth of the coral skeleton, and (as pertaining to the study of joints and jointing) with the question of adaptation in these to the conditions of existence. The study of the general question of origin, detailed constitution and relationship, of the coral skeleton, has for years engrossed the attention of Prof. Stewart; and to our knowledge of this subject and the allied one of the structural variations of the bony tissues of the osseous fishes, he has in the long run added more than most other investigators since von Kölliker. Beyond laying this magnificent result of his labours before audiences which annually assemble on the occasion of lectures delivered in his official capacity, and occasional "exhibits" before the Linnean and Zoological Societies, he, with a modesty so marked as to be well-nigh depreciative of his talents, has published nothing concerning them; and the present volume therefore comes rather as a memoir from his hands than as a mere official catalogue, and it is worth all the scattered papers he could have published in the time. It teems with interest and records of beautiful objects, and is illustrated by fourteen magnificent plates, mostly in colour, done from his own drawings by the facile hand of Green, than whom no better English lithographer in zoology exists. Of these plates no praise can be too high, and we expect for them an unprecedented popularity in the future. They must be seen to be appreciated, and, with the exquisite preparations they illustrate, constitute a possession of which even the Royal College of Surgeons may well be proud. Each of the entries in the catalogue bears a registration number, and where desirable a short bibliographic reference, as an aid to the student.

The success of this volume augurs well for the future of the museum and its collections, and knowing the unparalleled excellence of the numerous additions which during the last decade have been made to the series of which it treats, thanks to the curatorial genius of Prof. Stewart and the unrivalled skill of his lieutenant, Mr. R. H. Burne, we can safely predict even a better result for the volumes yet to come. The collection of zootomical preparations arising under their hands is far

and away the best in existence, and together with the governors of the college they have ensured a debt of gratitude which it will take generations to repay.

In the pages of this volume the student will find records of structures and relationships undreamt of in the text-books, unrecorded in the best monographs; and it is a pity that he is not informed of this. The work is a positive storehouse of new facts and intensely interesting details, and will be of inestimable value to zoologists at large.

#### A TEXT-BOOK OF MAMMALS.

*Text-book of Zoology, treated from a Biological Standpoint.* Part I., Mammals. By O. Schmeil. Translated by R. Rosenstock, and edited by J. T. Cunningham. 8vo. Pp. vii + 138, illustrated. (London: A. and C. Black, 1900.)

AS stated in the first title-page, this book is intended for the use of schools or colleges, forming, in fact, a portion of the series of School Text-books now in course of issue by the publishers. It is, therefore, essential that it should be written in a popular and attractive style, and also that it should be absolutely accurate and up-to-date, both as regards the facts recorded, and, so far as possible, in nomenclature. So far as this first item is concerned, the present fasciculus appears to fulfil the required conditions fairly well, the anatomical details being treated in a manner which renders them of easy apprehension by the student, while the descriptions of the animals themselves are, if anything, written in a too popular style. The plan adopted is to take a more or less typical member of a group for special treatment, and then to refer to the kindred forms in a more general manner. Illustrations are numerous; and while many of them are excellent, others, especially the cut of a family of oranges on p. 19, can only be described as hideous caricatures. In a book written primarily for German students, it must be inevitable that the animals of the Fatherland come in for a fuller share of notice than would have been the case had it been the product of an English author, but this is a fault of no special importance.

When, however, we come to the second essential feature of an elementary text-book—accuracy as regards facts, classification and nomenclature—we are bound to confess that the fasciculus before us fails lamentably. Indeed, its appearance is almost a calamity for zoological science in England, since the student who intends to pursue the subject seriously will have much to unlearn; and even for those who only desire a smattering of the subject, it is most important that they should become acquainted with animals by their proper titles, and that what they are taught as facts should really be such. In his preface the editor tells us that he has practically restricted his task to comparing the translation with the original, correcting the proofs, making here and there emendations in detail where a statement seemed open to doubt, or where differences between the faunas of Britain and Germany had to be indicated. For the sake of his own reputation it is a pity that he did not compare the work in detail with a standard English treatise on mam-

mals, when he could scarcely have failed to detect some of the shortcomings of the original text, despite the fact that all the English treatises on the subject are now more or less out of date.

As regards the general classification of the group, although this differs to a certain extent from the one generally adopted in this country, we have no comment to make, except that for some unaccountable reason the order Sirenia is totally omitted, while there appears to be no mention of the animals by which it is represented anywhere in the text!

Turning to some of the ordinal groups, we find the orang taken as a typical representative of the apes, and rightly named *Simia satyrus*. Naturalists will, however, be considerably surprised to see the chimpanzee (p. 22) assigned to the same genus (*Simia*), whereas the gorilla is made the type of a genus by itself; since if there is one well-established zoological fact, it is the intimate relationship existing between the chimpanzee and the gorilla, and the wide gulf separating both from the orang. Again, under the heading of the Platyrrhine apes, there is no reference to the marmosets, and we quite fail to find a reason for the statement (p. 22) that the howling monkeys are the best known members of that group. In treating of the Lemuroids, the author departs from his rule of selecting one species for special notice, and the space allotted to the group is ludicrously inadequate.

As an instance of careless writing we may refer to the notice of the tiger (p. 33), when, after stating that this animal is found in Amurland and Central Asia, the author proceeds to say that its "favourite haunts are swampy districts of the tropical zone, thickly overgrown with bamboo and similar bushes." Again, on p. 84 we find *Cricetus frumentarius* alluded to as "the marmot or hamster," although the true marmots are noticed in an earlier page. Passing on to p. 105, we meet with the statement that the Indian buffalo is said to exist in a wild state in the "East Indies"; while the European bison is stated to be extinct, although on an earlier page (98) its existence in Lithuania and the Caucasus is alluded to! Although we do not propose to notice in detail the hopelessly obsolete generic and specific nomenclature adopted, the statement on p. 106 that "the best-known African antelope is the gazelle (*Antilope dorcas*)" is, however, too ludicrously absurd and incorrect to be passed over. And as a second instance of incorrect nomenclature we may refer to the inclusion of the roe (p. 108) in the same genus as the red deer, from which the fallow deer is excluded. And in this connection it may be mentioned that the editor, who has been recently writing on deer antlers, should have been aware that the brow-tine is not developed in those of the roe.

Before leaving the Placentals, it may be mentioned that the practice of reckoning the carnassial teeth of the land Carnivora as distinct alike from the molar and premolar series is not calculated to give the student an idea of the homology of the cheek-teeth throughout the class. And we also venture to think that the statement on page 37, that "in its dentition the wolf very nearly resembles the cat," in spite of the subsequent qualification that the number of teeth is greater, scarcely accords with the facts.